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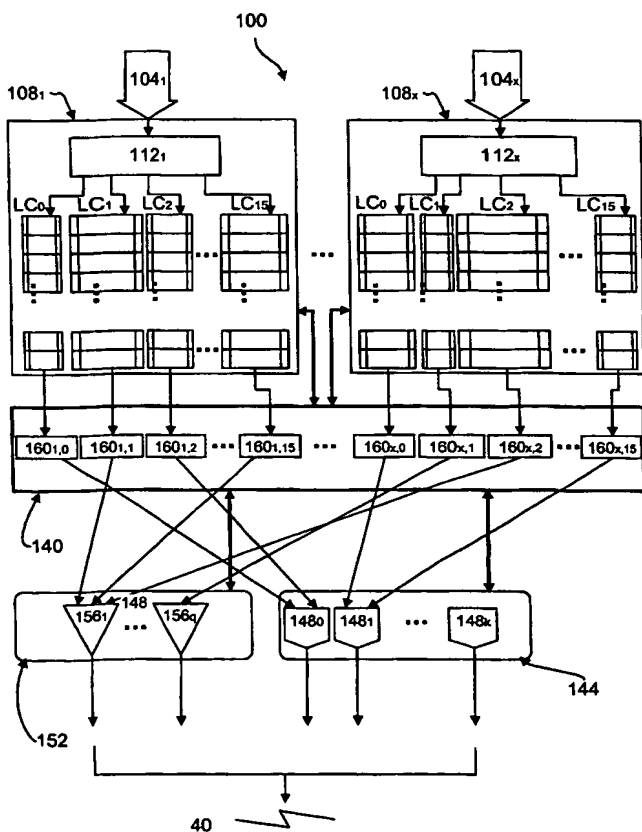
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[Continued on next page]

(54) Title: APPARATUS, SYSTEM AND METHOD FOR THE TRANSMISSION OF DATA WITH DIFFERENT QOS ATTRIBUTES



(57) Abstract: A novel apparatus, system and method for transmitting data flows having different quality of service (QoS) attributes over a network link structured in two or more channels is provided. The method classifies arriving packets to determine their required/assigned QoS attributes and places the classified packets into one of several logical channel queues, the selected logical channel queue having an appropriate corresponding set of QoS attributes defined. A radio link controller examines the available channels and, for each channel, selects a logical channel queue whose contents will be transmitted thereon. The radio link controller determines the data transmission capacity for each channel and segments the contents of the selected logical channel to fit within the determined capacity. The selection of the logical channel queue is performed in accordance with the set of QoS attributes and thus each flow can have different QoS characteristics including priorities, reliabilities (ARQ, no ARQ, etc.).

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A A	<p>US 2002/032788 A1 (EMANUEL FRANK ET AL) 14 March 2002 (2002-03-14) abstract; claims 1,6,10,12; figures 1,5,6</p> <p>paragraphs '0002!', '0003!', '0005!', '0007!'-'0009!', '0035!', '0041!'-'0043!', '0048!', '0049!', '0056!', '0057!'</p> <p>--- WO 02 01758 A (MOTOROLA INC) 3 January 2002 (2002-01-03) page 3, line 7 -page 4, line 14 page 10, line 26 -page 11, line 16 claims 1,4,7-9; figures 1,3</p> <p>--- -/-</p>	<p>1,9,11, 14-18 2-8,10, 12,13,19</p> <p>1,14</p>

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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- *&* document member of the same patent family

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>WO 01 78441 A (NOKIA NETWORKS OY ;KEKKI SAMI (FI)) 18 October 2001 (2001-10-18) page 6, line 21 - line 28 page 7, line 23 -page 8, line 10 claims 1,4,6,17-28,33,37,38; figures 1,2,4</p>	1,14
A	<p>----- MARCHANT B G ET AL: "Support of mobile multimedia over radio for a wide range of QoS and traffic profiles" IEEE INTERNATIONAL CONFERENCE ON PERSONAL WIRELESS COMMUNICATIONS PROCEEDINGS, XX, XX, 1999, pages 145-149, XP002157228 the whole document</p> <p>-----</p>	1,14

INTERNATIONAL SEARCH REPORT

information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2002032788	A1	14-03-2002	EP 1168753 A1	02-01-2002
			AU 5178101 A	03-01-2002
			CN 1330359 A	09-01-2002
			JP 2002044151 A	08-02-2002
WO 0201758	A	03-01-2002	US 6597919 B1	22-07-2003
			AU 5578601 A	08-01-2002
			WO 0201758 A1	03-01-2002
WO 0178441	A	18-10-2001	AU 5225801 A	23-10-2001
			CN 1429466 T	09-07-2003
			WO 0178441 A1	18-10-2001
			EP 1273202 A1	08-01-2003
			JP 2003530797 T	14-10-2003
			US 2003161325 A1	28-08-2003